

## CLAIMS

What is claimed is:

1. A geometrical image distortion correcting method with the aid of an auxiliary line for geometrically transforming the auxiliary line in a predetermined shape displayed on a display screen of a computer to correct the auxiliary line such that a projected image of the auxiliary line when  
5 projected from a projector to a screen fits the auxiliary line in the predetermined shape, said method comprising the steps of:  
virtually displaying a display area for a user interface screen within the display screen on a reduced scale using an application on the computer to define a virtual correction area around said display area  
10 displayed on the reduced scale; and  
geometrically transforming said auxiliary line in said virtual correction area as well.
2. The geometrical image distortion correcting method with the aid of an auxiliary line according to claim 1, further comprising the step of:  
determining the display area for the user interface screen within  
the display screen displayed on the reduced scale in association with the  
5 resolution of said projector.
3. The geometrical image distortion correcting method with the aid of an auxiliary line according to claim 1, further comprising the step of:  
displaying said display area on a reduced scale through a  
predetermined manipulation when the auxiliary line drawn on the display

5 area for the user interface screen within said display screen extends beyond said display area.

4. A system for geometrically correcting a projected image for distortion, comprising:

a computer operated under the control of a program;

a display connected to said computer for displaying a user

5 interface screen;

a projector for projecting an image; and

a screen on which a projected image emitted from said projector is displayed,

wherein an auxiliary line drawn by said computer is displayed  
10 on said display, and projected onto said screen through said projector, and the auxiliary line projected onto said screen is corrected for distortion through a predetermined transformation on the auxiliary line displayed on said display,

said computer comprising a function of virtually reducing a  
15 display area for said user interface screen on said display, and creating a virtual correction area capable of displaying said auxiliary line around the reduced display area.

5. The system for geometrically correcting a projected image for distortion according to claim 4, wherein said computer further comprises a function of determining the display area for said user interface screen corresponding to a specified resolution.

6. The system for geometrically correcting a projected image for distortion according to claim 4, wherein said computer further comprises a function of determining the display area for said user interface screen corresponding to the resolution of said projector.

7. The system for geometrically correcting a projected image for distortion according to claim 4, wherein said computer further comprises a function of reducing the display area for said user interface screen upon detecting that the auxiliary line drawn in said display extends beyond the display area for said user interface screen on said display, and creating a virtual correction area around the reduced display area.

8. The system for geometrically correcting a projected image for distortion according to claim 5, wherein said computer further comprises a function of reducing the display area for said user interface screen upon detecting that the auxiliary line drawn in said display extends beyond the display area for said user interface screen on said display, and creating a virtual correction area around the reduced display area.

9. The system for geometrically correcting a projected image for distortion according to claim 6, wherein said computer further comprises a function of reducing the display area for said user interface screen upon detecting that the auxiliary line drawn in said display extends beyond the display area for said user interface screen on said display, and creating a virtual correction area around the reduced display area.

10. The system for geometrically correcting a projected image for distortion according to claim 4, wherein:

said computer further comprises a processing function for geometrically transforming the auxiliary line with an approximate expression previously set to correct the projected image for distortion associated with the shape of a projection surface of said screen, and with a variable applied to transform said approximate equation; and

said projector comprises an image processing function for transforming the auxiliary line delivered from said projector based on the result of processing performed by said computer to project the transformed auxiliary line.

11. The system for geometrically correcting a projected image for distortion according to claim 5, wherein:

said computer further comprises a processing function for geometrically transforming the auxiliary line with an approximate expression previously set to correct the projected image for distortion associated with the shape of a projection surface of said screen, and with a variable applied to transform said approximate equation; and

said projector comprises an image processing function for transforming the auxiliary line delivered from said projector based on the result of processing performed by said computer to project the transformed auxiliary line.

12. The system for geometrically correcting a projected image for distortion according to claim 6, wherein:

said computer further comprises a processing function for geometrically transforming the auxiliary line with an approximate expression previously set to correct the projected image for distortion associated with the shape of a projection surface of said screen, and with a variable applied to transform said approximate equation; and

said projector comprises an image processing function for transforming the auxiliary line delivered from said projector based on the result of processing performed by said computer to project the transformed auxiliary line.

13. The system for geometrically correcting a projected image for distortion according to claim 7, wherein:

said computer further comprises a processing function for geometrically transforming the auxiliary line with an approximate expression previously set to correct the projected image for distortion associated with the shape of a projection surface of said screen, and with a variable applied to transform said approximate equation; and

said projector comprises an image processing function for transforming the auxiliary line delivered from said projector based on the result of processing performed by said computer to project the transformed auxiliary line.

14. The system for geometrically correcting a projected image for distortion according to claim 8, wherein:

said computer further comprises a processing function for geometrically transforming the auxiliary line with an approximate expression

5 previously set to correct the projected image for distortion associated with the shape of a projection surface of said screen, and with a variable applied to transform said approximate equation; and

said projector comprises an image processing function for transforming the auxiliary line delivered from said projector based on the  
10 result of processing performed by said computer to project the transformed auxiliary line.

15. The system for geometrically correcting a projected image for distortion according to claim 9, wherein:

said computer further comprises a processing function for geometrically transforming the auxiliary line with an approximate expression  
5 previously set to correct the projected image for distortion associated with the shape of a projection surface of said screen, and with a variable applied to transform said approximate equation; and

said projector comprises an image processing function for transforming the auxiliary line delivered from said projector based on the  
10 result of processing performed by said computer to project the transformed auxiliary line.